



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,421	11/27/2001	Kamel Benaissa	TI-30681	9408
23494	7590	01/13/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			DIAZ, JOSE R	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,421

Applicant(s)

BENAISSA ET AL.

Examiner

José R Díaz

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 15-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14 and 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 11-14, 19, 21 and 22 are still rejected under 35 U.S.C. 102(e) as being anticipated by Tarabbia et al. (US Pat. No. 6,351,020 B1).

Regarding claim 11, Tarabbia et al. teaches a method of forming a semiconductor device comprising the step of: providing a semiconductor substrate (199) having first and second isolation region (consider the STI regions, not labeled, that are at each end side of the well 204 in Fig. 2); forming a well region (204) between the first and second isolation region (see Fig. 2); forming a contact isolation structure (202) in said well (consider the STI regions labeled as 202, which are beneath the gate (206) in Figure 2); forming a gate dielectric layer (205) on said well and said contact isolation region (see Fig. 2); forming a gate layer (206) on said dielectric layer such that said gate layer overlies said contact isolation region (see Fig. 2); and forming electrical contacts to said gate conductive layer (see abstract).

Art Unit: 2815

Regarding claim 12, Tarabbia et al. teaches that said first and second isolation regions comprise STI structures (consider the STI regions, not labeled, that are at each end side of the well 204 in Fig. 2).

Regarding claim 13, Tarabbia et al. teaches that said contact isolation structure comprises STI structure (consider the STI regions labeled as 202, which are beneath the gate 206 in Figure 2).

Regarding claims 14 and 19, Tarabbia et al. further teaches forming well contact region (208) adjacent to said first and second isolation regions (see Fig. 2).

Regarding claim 21, Tarabbia et al. further teaches that the well (204) is a n-type (see Fig. 2).

Regarding claim 22, Tarabbia et al. further teaches that the invention is restricted to n-type well (see col. 6, lines 33-48).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

Art Unit: 2815

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claim 20 is still rejected under 35 U.S.C. 103(a) as being unpatentable over Tarabbia et al. (US Pat. No. 6,351,020 B1) in view of Applicant's Specification.

Regarding claim 20, Tarabbia et al. fails to teach the further step of forming sidewall structures adjacent to said gate layer. However, Applicant acknowledges that it is well known in the art to use sidewall structures for implanting source and drain extension regions (see page 6 and page 7, lines 1-2). Therefore, it would have been obvious to one having ordinary skill in the art at the same time the invention was made to modify Tarabbia et al. to include sidewall structure adjacent to the gate layer. The ordinary artisan would have been motivated to modify Tarabbia et al. in the manner described above for at least the purpose of providing a mask during the implantation of the well contact regions.

Response to Arguments

6. Applicant's arguments filed October 24, 2003 have been fully considered but they are not persuasive. Applicant argued that Tarabbia et al. fails to teach the limitation of forming contacts to the gate conductive layer over the contact isolation region. However, the examiner disagrees. The abstract and figure 6 of Tarabbia et al. expressly teach the formation of contacts to connect the gate conductive layer of each capacitor

Art Unit: 2815

(601-604). And, Figures 2 and 3 further show that such contact (308) is formed on the gate conductive layer (206) that is over the contact isolation region (202). Therefore, Tarabbia et al. anticipates the claimed limitation.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Correspondence

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R Díaz whose telephone number is (703) 308-6078 or (571) 272-1727, after February 9, 2004. The examiner can normally be reached on 9:00-5:00 Monday through Friday.

Art Unit: 2815

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in dark ink, appearing to read "A. Wilson", with a long horizontal flourish extending to the right.

ALLAN R. WILSON
PRIMARY EXAMINER

JRD